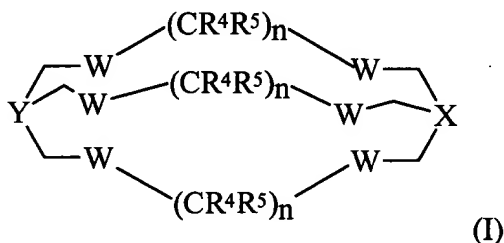


This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A compound which is capable of being radiolabelled of general formula (I) which is as follows:

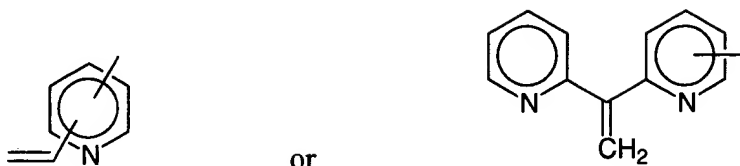


in which n represents an integer from 2 to 4,
where each R^4 and R^5 is independently selected from -H, CH_3 , $COOH$, NO_2 , CH_2OH , H_2PO_4 , HSO_3 , CN , $C(=O)NH_2$ and CHO ;

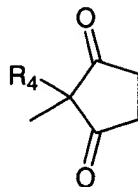
X and Y are the same or different and are selected from the group of C-R, N, P and C-Z in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, $-COOR'$, $COCOOR'$, $NH-COCH_2Br$, $-NH-CO-CH=CH-COOR'$ in which R' is a hydrogen atom or alkyl group;

W is selected from the group of NH, S and O; and

Z is a functionalized linkage group which is capable of binding said compound of formula (I) to a molecular recognition unit, selected from the group consisting of $C(=NH)OR^2$, NCO , NCS , SR^2 , $NHNR^2R^3$, $NHCONHNR^2R^3$, $NHCSNHNR^2R^3$, $CONR^2R^3$, NR^2R^3 , $(CH_2)_pR^6$, $(CH_2)_pArR^1$, $(CH_2O)_pCH_2R^1$, $(CH_2OCH_2O)_qArR^1$, $(CHCH)_rR^1$, $(CHCH)_rArR^1$, maleimide, a vinyl pyridyl group of formula



a dione of formula



and a substituted vinyl group of formula Het¹-C(Het²)=CH₂ where Het¹ and Het² are the same or different and each is a nitrogen containing heterocyclic group or Het¹ is a nitrogen containing heterocyclic group and Het² is H; where

R² and R³ are the same or different and are independently selected from H, (CH₂)_pR¹, (CH₂)_pArR¹, (CH₂O)_pCH₂R¹, -(CH₂OCH₂O)_qArR¹, (CHCH)_rR¹ and (CHCH)_rArR¹, with the proviso that when R² is H, R³ is not H; wherein R² and R³ together with the nitrogen atom to which they are attached optionally form an optionally substituted saturated or partially substituted ring optionally containing one or more further heteroatoms selected from O, S or N;

R¹ is selected from SH, OH, NH₂, COOH, NCS, -N=N, or -C(=NH)OCH₃ and COR", where R" is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

R⁶ is selected from SH, OH, NH₂, COOH, NCS, -N=N, or -C(=NH)OCH₃ and COR"; where R" is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

p is an integer from 1 to 20; q is an integer from 1 to 20; r is an integer from 1 to 4; and Ar is optionally substituted aryl or optionally substituted aralkyl; and

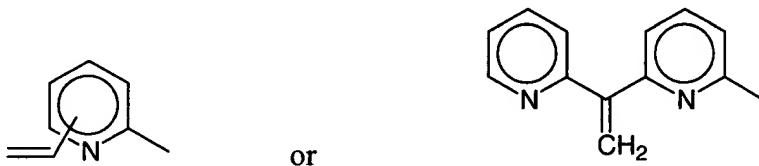
wherein at least one of X and Y is C-Z,

or a pharmaceutically acceptable salt thereof.

2. (Original) A compound according to claim 1, wherein the molecular recognition unit is selected from the group consisting of an antibody, protein, peptide, carbohydrate, nucleic

acid, oligonucleotide, oligosaccharide and liposome.

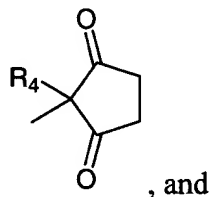
3. (Currently Amended) A compound according to claim 1, wherein the functionalised linkage group Z of the compound of Formula (I) is a vinyl pyridyl group of the formula



4. (Original) A compound according to claim 1, wherein the functionalised linkage group Z of the compound of Formula (I) is selected from



a dione of formula



NR^2R^3 , where R^2 and R^3 are the same or different and are independently selected from H, $(\text{CH}_2)_p\text{R}^1$, $(\text{CH}_2)_p\text{ArR}^1$, $(\text{CH}_2\text{O})_p\text{CH}_2\text{R}^1$, $-(\text{CH}_2\text{OCH}_2\text{O})_q\text{ArR}^1$, $-(\text{CHCH})_r\text{R}^1$, and $(\text{CHCH})_r\text{ArR}^1$, with the proviso that when R^2 is H, R^3 is not H, and where R^1 is selected from NH_2 , COOH , NCS , NCO , $-\text{N}=\text{N}$, $-\text{C}(=\text{NH})\text{OCH}_3$, and COR'' where R'' is H, halogen, alkyl, or alkyl substituted with a halogen or other leaving group, where p is an integer from 1 to 20; q is an integer from 1 to 20; r is an integer from 1 to 4; and Ar is optionally substituted aryl or optionally substituted aralkyl, provided that at least one of R^2 and R^3 is other than hydrogen.

5. (Original) A compound according to claim 1, wherein W is NH and Z is selected

from NR^2R^3 where R^2 and R^3 are the same or different and are independently selected from H, $(\text{CH}_2)_p\text{R}^1$, and $(\text{CH}_2)_p\text{ArR}^1$, with the proviso that when R^2 is H, R^3 is not H; R^1 is selected from NH_2 , COOH and NCS ; and p is an integer from 1 to 4.

6. (Original) A compound according to claim 4, wherein the Z group of said compound of Formula (I) is NR^2R^3 where R^2 and R^3 together with the nitrogen atom to which they are attached form an optionally substituted saturated or partially unsaturated ring optionally containing one or more further heteroatoms O, S or N, whereby there is at least one substituent capable of binding said compound of Formula (I) with a molecular recognition unit.

7. (Canceled)

8. (Currently Amended) A compound according to claim 1, wherein said compound is complexed with a metal ion other than cobalt.

9. (Currently Amended) A compound according to claim 8, wherein the metal ion is selected from Cu, Tc, Gd, Ga, In, Y, ~~Co~~, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, ~~Gd~~, Tb, Sc.

10. (Currently Amended) A compound according to claim 9, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , ~~Cu, Cu~~, Tc, In, Gd, Ga, Fe, ~~Cu~~, Ti and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

11. (Original) A compound according to claim 10, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

12. (Currently Amended) A pharmaceutical ~~formulation~~ composition comprising a compound of formula (I) according to claim 1, a radiolabelled complex or pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

13. (Currently Amended) A diagnostic formulation comprising a compound of formula (I) according to claim 1, a radiolabelled complex or pharmaceutically acceptable salt thereof and a reducing agent in a pharmaceutically acceptable carrier.

14. (Currently Amended) A method of diagnosis or therapy in a subject comprising administering to the subject ~~a diagnostically or therapeutically~~ an effective amount of a metal complex or a radiolabelled complex of a compound of formula (I) according to claim 1 ~~or a metal complex, radiolabelled complex~~ or a pharmaceutically acceptable salt thereof.

15-16. (Canceled)

17. (Original) A conjugate compound comprising at least one compound of Formula (I) according to claim 1, or a metal complex, radiolabelled complex, or a pharmaceutically acceptable salt thereof bonded to at least one molecular recognition unit comprising an antibody, protein, peptide, carbohydrate, oligonucleotide, oligosaccharide.

18. (Currently Amended) A method of diagnosis or therapy of a disease in a subject comprising administering to the subject ~~a diagnostically or therapeutically~~ an effective amount of a conjugate compound according to claim 17.

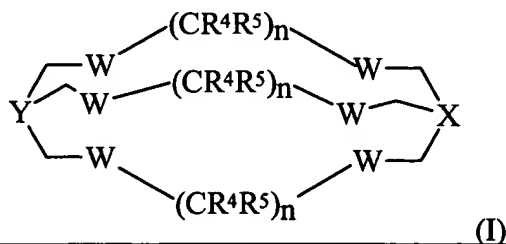
19-20. (Canceled)

21. (Currently Amended) A method of imaging a subject comprising ~~introducing~~ administering to said subject an effective amount of a metal complex or radiolabelled complex of a compound of Formula (I) according to claim 1 ~~or a metal complex, radiolabelled complex, conjugate compound~~ or a pharmaceutically effective salt thereof ~~to a subject~~.

22-23. (Cancelled)

24. (New) A method of imaging a subject comprising administering to said subject an effective amount of a metal complex or a radiolabelled complex of a conjugate compound according to claim 17 or a pharmaceutically effective salt thereof.

25. (New) A compound which is capable of being radiolabelled of general Formula (I) which is as follows:



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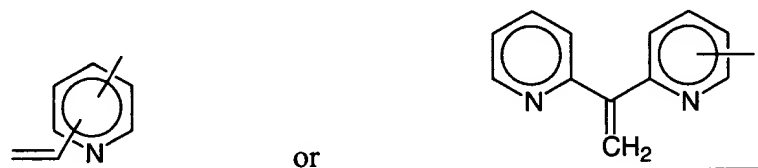
in which n represents an integer from 2 to 4,

where each R⁴ and R⁵ is independently selected from -H, CH₃, COOH, NO₂, CH₂OH, H₂PO₄, HSO₃, CN, C(=O)NH₂ and CHO;

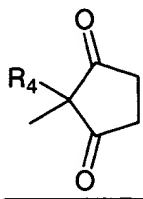
X and Y are the same or different and are selected from the group of C-R, N, P and C-Z
in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally
substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, -COOR',
COCOOR', NH-COCH₂Br, -NH-CO-CH=CH-COOR' in which R' is a hydrogen atom or alkyl
group;

W is selected from the group of NH, S and O; and

Z is a functionalised linkage group which is capable of binding said compound of
formula (I) to a molecular recognition unit, selected from the group consisting of C(=NH)OR²,
NCO, NCS, SR², NHR²R³, NHCONHR²R³, NHCSNHR²R³, CONR²R³, NR²R³, (CH₂)_pR⁶,
(CH₂)_pArR¹, (CH₂O)_pCH₂R¹, (CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, maleimide, a vinyl pyridyl group
of formula



a dione of formula



and a substituted vinyl group of formula Het¹-C(Het²)=CH₂ (where Het¹ and Het² are the same
or different and is each a nitrogen containing heterocyclic group or Het¹ is a nitrogen containing
heterocyclic group and Het² is H, where

R² and R³ are the same or different and are independently selected from H, (CH₂)_pR¹,
(CH₂)_pArR¹, (CH₂O)_pCH₂R¹, -(CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, (CHCH)_rArR¹, with the

proviso that when R^2 is H, R^3 is not H; wherein R^2 and R^3 together with the nitrogen atom to which they are attached optionally form an optionally substituted saturated or partially substituted ring optionally containing one or more further heteroatoms selected from O, S or N;

R^1 is selected from SH, OH, NH_2 , COOH, NCS, $-N=N$, or $-C(=NH)OCH_3$, COR", where R'' is H, halogen, N_3 , alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

R^6 is selected from SH, OH, NH_2 , COOH, NCS, $-N=N$, or $-C(=NH)OCH_3$ and COR"; where R'' is H, halogen, N_3 , alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

p is an integer from 1 to 20; q is an integer from 1 to 20; r is an integer from 1 to 4; and Ar is optionally substituted aryl or optionally substituted aralkyl; wherein at least one of X and Y is C-Z,

with the proviso that when one of X and Y is C-R where R is NH_2 , Z is NR^2R^3 , R^2 is H, R^3 is $(CH_2)_pArR^1$, p is 1, and Ar is phenyl, then R^1 is not an -OH group at the ortho- or meta-position of the phenyl ring;

when X and Y are both C-Z, Z is NR^2R^3 , R^2 is H, R^3 is $(CH_2)_pArR^1$, p is 1, and Ar is phenyl, then R^1 is not an -OH group at the ortho- or meta-position of the phenyl ring; and

with the proviso that when one of X and Y is C-R where R is CH_3 , Z is NR^2R^3 , R^2 is H, R^3 is $(CH_2)_pR^1$ and p is 1, then R^1 is not COOH;

or a pharmaceutically acceptable salt thereof.

26. (New) A compound according to claim 25, wherein said compound is complexed with a metal ion.

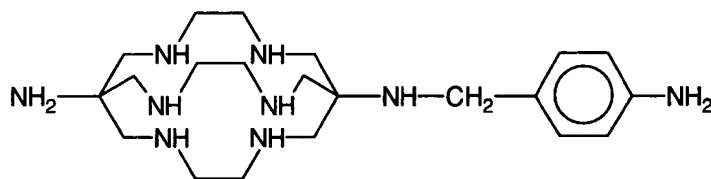
27. (New) A compound according to claim 26, wherein the metal ion is selected from Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Sc.

28. (New) A compound according to claim 27, wherein the metal ion is a

radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Gd, Ga, Fe, Ti and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

29. (New) A compound according to claim 28, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

30. (New) A compound having the following structure:



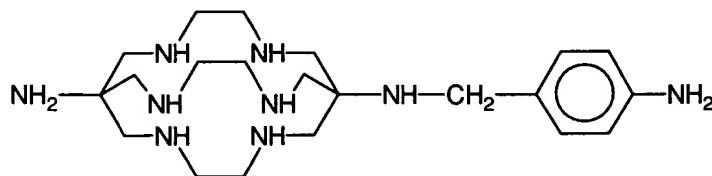
31. (New) The compound according to claim 30 which is complexed with a metal ion.

32. (New) The compound according to claim 31 wherein the metal ion is selected from Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Sc.

33. (New) A compound according to claim 32, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Gd, Ga, Fe, Co, Ti and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

34. (New) A compound according to claim 33, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

35. (New) A method of diagnosis or therapy in a subject comprising administering to said subject an effective amount of a metal complex of a compound having the structure



or a pharmaceutically acceptable salt thereof.

36. (New) The method of claim 35 wherein said metal ion is selected from Cu, Tc,

Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Sc.

37. (New) The method of claim 36, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Gd, Ga, Fe, Co, Ti and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

38. (New) The method of claim 37, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

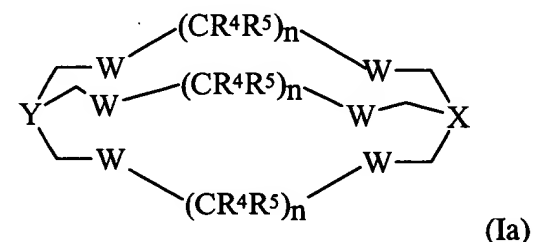
39. (New) A compound of Formula (I) according to claim 1, wherein W is NH, R^4 and R^5 are each hydrogen, n is 2, X is CR where R is selected from the group consisting of amino, nitro, alkyl, hydroxy and halogen; Y is CZ wherein Z is NR^2R^3 where R^2 is hydrogen and R^3 is $(\text{CH}_2)_p\text{ArR}^1$, wherein p is 1 and R^1 is selected from NH_2 , COOH and NCS.

40. (New) The compound of claim 39, wherein said compound is complexed to a metal ion selected from Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Sc.

41. (New) The compound of claim 40, wherein said metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Gd, Ga, Fe, Co, Ti and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

42. (New) A compound according to claim 41, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

43. (New) A compound which is capable of being radiolabelled of general formula (Ia) which is as follows:



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in which n represents an integer from 2 to 4,

where each R⁴ and R⁵ is independently selected from -H, CH₃, COOH, NO₂, CH₂OH, H₂PO₄, HSO₃, CN, C(=O)NH₂ and CHO;

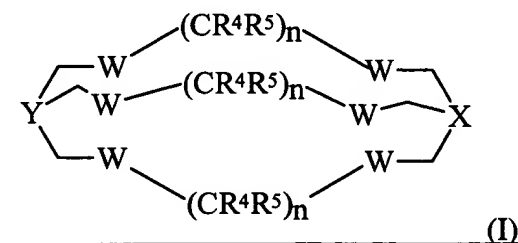
X and Y are the same or different and are selected from the group of C-R, N, P and C-Z
in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally
substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, -COOR',
COCOOR', NH-COCH₂Br, -NH-CO-CH=CH-COOR' in which R' is a hydrogen atom or alkyl
group;

W is selected from the group of NH, S and O; and

Z is a functionalised linkage group which is capable of binding said compound of formula
(I) to a molecular recognition unit, selected from a vinyl pyridyl group of formula



44. (New) A compound which is capable of being radiolabelled of general formula
(I) which is as follows:



in which n represents an integer from 2 to 4,

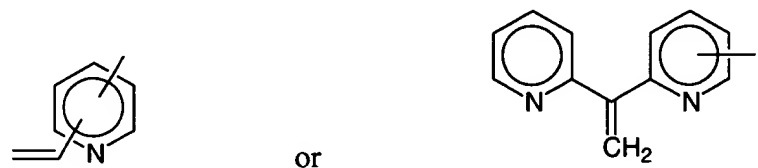
where each R⁴ and R⁵ is independently selected from -H, CH₃, COOH, NO₂, CH₂OH, H₂PO₄, HSO₃, CN, C(=O)NH₂ and CHO;

X and Y are the same or different and are selected from the group of C-R, N, P and C-Z

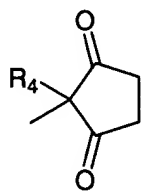
in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, -COOR', COCOOR', NH-COCH₂Br, -NH-CO-CH=CH-COOR' in which R' is a hydrogen atom or alkyl group;

W is selected from the group of NH, S and O; and

Z is a functionalised linkage group which is capable of binding said compound of formula (I) to a molecular recognition unit, selected from the group consisting of C(=NH)OR², NCO, NCS, SR², NHNHNR²R³, NHCONHNR²R³, NHCSNHNR²R³, CONR²R³, NR²R³, (CH₂)_pR⁶, (CH₂)_pArR¹, (CH₂O)_pCH₂R¹, (CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, maleimide, a vinyl pyridyl group of formula



a dione of formula



and a substituted vinyl group of formula Het¹-C(Het²)=CH₂ where Het¹ and Het² are the same or different and is each a nitrogen containing heterocyclic group or Het¹ is a nitrogen containing heterocyclic group and Het² is H, where

R² and R³ are the same or different and are independently selected from H, (CH₂)_pR¹, (CH₂)_pArR¹, (CH₂O)_pCH₂R¹, -(CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, (CHCH)_rArR¹, with the proviso that when R² is H, R³ is not H; wherein R² and R³ optionally form a ring with the nitrogen atom to which they are attached;

R¹ is selected from SH, OH, NH₂, COOH, NCS, -N=N-, or -C(=NH)OCH₃, COR'', where R'' is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a

halogen or other leaving group; and

new matter
R⁶ is selected from SH, ~~(OH)~~NH₂, COOH, NCS, -N=N, or -C(=NH)OCH₃ and COR'';
where R'' is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted
with a halogen or other leaving group; and

p is an integer from 1 to 20; q is an integer from 1 to 20; r is an integer from 1 to 4; and Ar
is optionally substituted aryl or optionally substituted aralkyl; and wherein at least one of X and
Y is C-Z, or a pharmaceutically acceptable salt thereof,

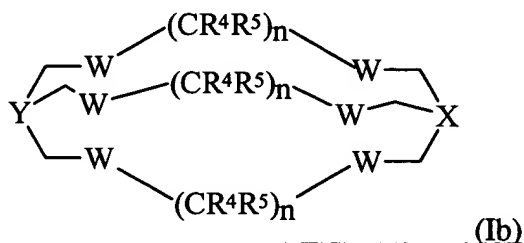
when prepared by reducing the Cu complex of said compound of formula (I) with sodium
borohydride in the presence of Pd/C.

45. (New) The compound according to claim 44, when complexed with a metal ion
selected from Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn,
Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm,
Ho, Tb, Sc.

BM New matter
46. (New) A compound according to claim 45, wherein the metal ion is a
radionuclide selected from the group consisting of ⁶⁴Cu, ⁶⁷Cu, Tc, In, ~~Gd~~, Ga, Fe, ~~Co~~, Ti and
other radionuclides from the Lanthanides, Re, Sm, Ho and Y.

47. (New) A compound according to claim 46, wherein the radionuclide is selected
from ⁶⁴Cu and ⁶⁷Cu.

48. (New) A compound which is capable of being radiolabelled of general formula
(Ib) which is as follows:



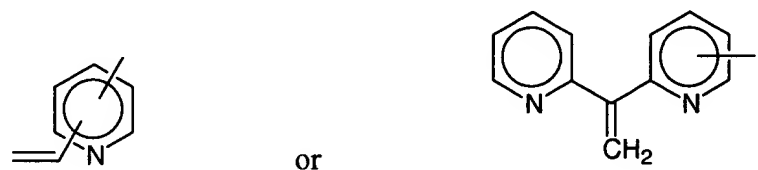
in which n represents an integer from 2 to 4,

where each R⁴ and R⁵ is independently selected from -H, CH₃, COOH, NO₂, CH₂OH,
H₂PO₄, HSO₃, CN, C(=O)NH₂ and CHO;

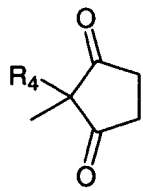
X and Y are the same or different and are selected from the group of C-R, N, P and C-Z in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, -COOR', COCOOR', NH-COCH₂Br, -NH-CO-CH=CH-COOR' in which R' is a hydrogen atom or alkyl group;

W is selected from the group of NH, S and O; and

Z is a functionalised linkage group which is capable of binding said compound of formula (I) to a molecular recognition unit, selected from the group consisting of C(=NH)OR², NCO, NCS, SR², NHNHNR²R³, NHCONHNR²R³, NHCSNHNR²R³, CONR²R³, NR²R³, (CH₂)_pR⁶, (CH₂)_pArR¹, (CH₂O)_pCH₂R¹, (CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, maleimide, a vinyl pyridyl group of formula



a dione of formula



and a substituted vinyl group of formula Het¹-C(Het²)=CH₂ (where Het¹ and Het² are the same or different and is each a nitrogen containing heterocyclic group or Het¹ is a nitrogen containing heterocyclic group and Het² is H, where

R² and R³ are the same or different and are independently selected from H, (CH₂)_pR¹, (CH₂)_pArR¹, (CH₂O)_pCH₂R¹, -(CH₂OCH₂O)_qArR¹, (CHCH)_rR¹, (CHCH)_rArR¹, with the proviso that when R² is H, R³ is not H; wherein R² and R³ together with the nitrogen atom to which they are attached optionally form an optionally substituted saturated or partially substituted ring optionally containing one or more further heteroatoms selected from O, S or N;

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R¹ is selected from SH, NCS, -N=N, or -C(=NH)OCH₃, COR", where R" is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

*new
noted
B7*
R⁶ is selected from SH, (OH), NH₂, COOH, NCS, -N=N, or -C(=NH)OCH₃ and COR"; where R" is H, halogen, N₃, alkoxy, OAr, imidyloxy, imidazoyloxy, alkyl, or alkyl substituted with a halogen or other leaving group; and

p is an integer from 1 to 20; q is an integer from 1 to 20; r is an integer from 1 to 4; and Ar is optionally substituted aryl or optionally substituted aralkyl;

wherein at least one of X and Y is C-Z,
or a pharmaceutically acceptable salt thereof.
